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09/734,801	12/12/2000	Roland Carlsson	EricPotter	5194

110 7590 09/24/2003

DANN, DORFMAN, HERRELL & SKILLMAN  
1601 MARKET STREET  
SUITE 2400  
PHILADELPHIA, PA 19103-2307

EXAMINER

CHUNDURU, SURYAPRABHA

ART UNIT	PAPER NUMBER
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1637

19

DATE MAILED: 09/24/2003

Please find below and/or attached an Office communication concerning this application or proceeding.

# Office Action Summary

Application No.

09/734,801

Applicant(s)

CARLSSON ET AL.

Examiner

Suryaprabha Chunduru

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

## Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

## Status

- 1) ☒ Responsive to communication(s) filed on 21 May 2003.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

## Disposition of Claims

- 4) ☒ Claim(s) 1-7 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-7 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

## Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- 11) ☐ The proposed drawing correction filed on \_\_\_\_\_ is: a) ☐ approved b) ☐ disapproved by the Examiner.
- If approved, corrected drawings are required in reply to this Office action.
- 12) ☐ The oath or declaration is objected to by the Examiner.

## Priority under 35 U.S.C. §§ 119 and 120

- 13) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some \* c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- \* See the attached detailed Office action for a list of the certified copies not received.
- 14) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).
- a) ☐ The translation of the foreign language provisional application has been received.
- 15) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

## Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO-1449) Paper No(s) \_\_\_\_\_.
- 4) ☐ Interview Summary (PTO-413) Paper No(s). \_\_\_\_\_.
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: \_\_\_\_\_.

**DETAILED ACTION**

1. Applicants' response to the office action (Paper No. 17) filed on May 21, 2003 has been entered and considered.
2. The Terminal Disclaimer (Paper No. 18) and the Declaration filed on May 21, 2003 has been entered and considered.
3. The instant application is filed on December 12, 2000, which claims no priority date.
4. Claims 1-6 are pending. New claim 7 is added.

**Response to arguments**

5. Applicants' response to the office action (Paper No. 17) is fully considered and found persuasive in part.
6. With reference to the rejection made in the previous office action under 35 USC 112, second paragraph applicants' arguments are fully considered and the rejection is withdrawn in view of the arguments (Paper No. 7).
7. With reference to the rejection made in the previous office action under obviousness-type double patenting, terminal disclaimer is considered and the rejection is with drawn in view of the terminal disclaimer.
8. With reference to the above rejection, Applicants' arguments are fully considered and found persuasive in part. Applicants argue that Kikuchi et al. teach digestion of single stranded DNA with an endonuclease (Dnase I), and the instant claim 1 recites an exonuclease digestion. This argument is fully considered and the rejection is with drawn herein. However, Applicants argue that exonulceases such as BAL31 catalyzes the cleavage of nucleotides from the ends, This

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argument is fully considered however, it is noted from Short protocols in Molecular biology (SPMB) that BAL31 as an endonuclease (see enclosed section 3.12 from SPMB).

9. With reference to the rejection made in the previous office action under 35 USC 103(a), applicants' arguments are fully considered and found persuasive in part. The rejection is withdrawn based on applicants' arguments that the prior art does not teach an exonuclease digestion. Applicants' arguments on the differences between DNase I and BAL31 are fully considered however this argument is irrelevant to the instant claims. Further, applicants' assert that BAL31 is an exonuclease. It is noted from Short protocols in Molecular biology (SPMB) that BAL31 is an endonuclease (see enclosed section 3.12 from SPMB).

#### ***New Grounds of Rejections***

#### ***Claim Rejections - 35 USC § 112***

10. The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

Claim 2 is rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention. Claim 2 is indefinite in the recitation of the term 'optionally'. It is unclear whether any of the limitations, which follow the term optionally, are required limitations, i.e. are the further steps of adding primer sequences, 'optional' or critical. The metes and bounds of the claims are unclear.

#### ***Double Patenting***

11. The nonstatutory double patenting rejection is based on a judicially created doctrine grounded in public policy (a policy reflected in the statute) so as to prevent the unjustified or improper timewise extension of the "right to exclude" granted by a patent and to prevent possible harassment by multiple assignees. See *In re Goodman*, 11 F.3d 1046, 29 USPQ2d 2010 (Fed.

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Cir. 1993); *In re Longi*, 759 F.2d 887, 225 USPQ 645 (Fed. Cir. 1985); *In re Van Ornum*, 686 F.2d 937, 214 USPQ 761 (CCPA 1982); *In re Vogel*, 422 F.2d 438, 164 USPQ 619 (CCPA 1970); and, *In re Thorington*, 418 F.2d 528, 163 USPQ 644 (CCPA 1969).

A timely filed terminal disclaimer in compliance with 37 CFR 1.321(c) may be used to overcome an actual or provisional rejection based on a nonstatutory double patenting ground provided the conflicting application or patent is shown to be commonly owned with this application. See 37 CFR 1.130(b).

Effective January 1, 1994, a registered attorney or agent of record may sign a terminal disclaimer. A terminal disclaimer signed by the assignee must fully comply with 37 CFR 3.73(b).

A. Claims 1, and 3-6 are provisionally rejected under the judicially created doctrine of obviousness-type double patenting as being unpatentable over claims 1, 3-4, 6-8, 10-13 of copending Application No. 10/321,195 (US 2003/0148353).

Although the conflicting claims are not identical, they are not patentably distinct from each other because claims 1, 3-4, 6-8, 10-13 of the co-pending application are drawn to a method for generating a polynucleotide or population of sequences from parent polynucleotide sequences encoding one or more protein motifs, comprising the steps of (a) digesting the parent polynucleotide sequence with at least an exonuclease to generate a population of fragments wherein digesting with at least one exonuclease comprises a first parent polynucleotide sequence with a first exonuclease to produce a first population of fragments and digesting a second parent polynucleotide sequence with a second exonuclease to produce a second population of fragments; (b) contacting said first and second population of fragments under annealing conditions; (c) amplifying the annealed fragments in step (b) to generate at least one polynucleotide sequence encoding one or more protein motifs having altered characteristics as compared to the one or more protein motifs encoded by said parent polynucleotide. Further the claims in the co-pending application discloses that (i) isolating single-stranded plus and minus strand polynucleotide sequences to generate a plus strand population and a minus strand

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population prior to step a; (ii) BAL3 as exonuclease; (iii) parent polynucleotide sequences are subjected to mutagenesis (iv) mutagenesis is error prone mutagenesis (error prone PCR).

Claims 1, 3-6 of the instant invention are drawn to the said method as disclosed in the co-pending application. This is a provisional obviousness-type double patenting rejection because the conflicting claims have not in fact been patented.

B. Claims 2 and 7 are provisionally rejected under the judicially created doctrine of obviousness-type double patenting as being unpatentable over claims 1, 3-4, 6-8, 10-13 of copending Application No. 10/321,195 (US 2003/0148353) in view of Lietz (USPN. 6,251,604).

Although the conflicting claims are not identical, they are not patentably distinct from each other because claims 1, 3-4, 6-8, 10-13 of the co-pending application are drawn to a method for generating a polynucleotide or population of sequences from parent polynucleotide sequences encoding one or more protein motifs, comprising the steps of (a) digesting the parent polynucleotide sequence with at least an exonuclease to generate a population of fragments wherein digesting with at least one exonuclease comprises a first parent polynucleotide sequence with a first exonuclease to produce a first population of fragments and digesting a second parent polynucleotide sequence with a second exonuclease to produce a second population of fragments; (b) contacting said first and second population of fragments under annealing conditions; (c) amplifying the annealed fragments in step (b) to generate at least one polynucleotide sequence encoding one or more protein motifs having altered characteristics as compared to the one or more protein motifs encoded by said parent polynucleotide. Further the claims in the co-pending application discloses that (i) isolating single-stranded plus and minus strand polynucleotide sequences to generate a plus strand population and a minus strand

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population prior to step a; (ii) BAL3 as exonuclease; (iii) parent polynucleotide sequences are subjected to mutagenesis (iv) mutagenesis is error prone mutagenesis (error prone PCR). The co-pending application did not teach addition of primer sequences to the 3' and 5' ends of at least one of the parent polynucleotides and amplifying the annealed hybrids to generate a further polynucleotide encoding one or more protein motifs having altered characteristics.

Lietz teaches a method for random mutagenesis of a target nucleic acid by the insertion, deletion or substitution of one or more oligonucleotides during amplification, wherein Lietz discloses annealing primer sequences to 3' and 5' ends of a parent polynucleotide and performing amplification of the annealed hybrid using polymerase chain reaction (see column 3, lines 7-29).

Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to combine the method of generating a polynucleotide sequence as disclosed in the co-pending application by Borrebaeck et al. with a method of random mutagenesis as taught by Lietz to achieve the claimed invention as a whole for the expected advantage of developing an improved and sensitivity method for generating a polynucleotide sequence with altered characteristics because Lietz suggests that "use of oligonucleotides where all or a portion of their sequences are unknown at the time of primer extension amplification, allows to generate random libraries of sequences which obviates the need to custom design the oligonucleotides relative to the target sequences" (see column 7, lines 24-40). It would be obvious to a person of ordinary skill in the art at the time the invention was made, to combine the teachings of Borrebaeck et al. with the teachings of Lietz in order to achieve an improved and sensitive method for generating a random library of polynucleotide sequences with altered characteristics.

Therefore, the instant claims are obvious over co-pending application 10/321,195 in view of Lietz. This is a provisional obviousness-type double patenting rejection.


***Conclusion***

No claims are allowable.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Suryaprabha Chunduru whose telephone number is 703-305-1004. The examiner can normally be reached on 8.30A.M. - 4.30P.M, Mon - Friday.

If attempts to reach the examiner are unsuccessful, the primary examiner in charge of the prosecution of this case, Jeffrey Fredman can be reached at 703-308-6568. If attempts to reach the examiners by telephone are unsuccessful, the examiner's supervisor, Gary Benzion can be reached on 703-308-1119. The fax phone numbers for the organization where this application or proceeding is assigned are 703-305-3014 for regular communications and - for After Final communications.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is 703-308-0196.

  
Suryaprabha Chunduru  
September 11, 2003

  
JEFFREY FREDMAN  
PRIMARY EXAMINER